

Year	Development	Grade	Overview
2008	<u>County Carnival</u>	Grades 6-8	Students will need to have a previous knowledge of operations with simple fractions, decimals and percents. This unit will review these operations through the use of cooperative learning groups, designed around a carnival theme. At the end of this unit, the students will be able to identify the equivalency of fractions, decimals and percents.
2008	<u>Oh, Snap!</u>	Grades 6-8	Students will collect, organize and analyze data using fractions, decimals and percents to make predictions about populations. They will then make estimates of the total number in a population based on sample data. They will use a capture/recapture technique and ratios/proportion to determine their estimates of the number of turtles in a pond.
2008	<u>Playing With Primes</u>	Grades 6-8	In these related activities, students will conduct an investigation of a prime-generation pattern working in pairs, and then apply some of the factoring concepts they have gained to factor monomials.
2006	<u>Rescue Rendezvous: Can a Search and Rescue Team Reach an Endangered Teen Pilot in Time? Part II A Part II B Part III Part III A Part III B</u>	Grades 6-8	Like Brian in Gary Paulsen's novel, Hatchet, Laura, 15 years old, was the sole passenger on a small airplane when the pilot had a heart attack and died. Fortunately, Laura had listened carefully when, before and soon after takeoff, the pilot had explained the theory of flying a small aircraft. When the pilot became incapacitated, Laura had to send a distress signal and then make several calculations in order to predict a landing place that could be communicated by radio to emergency personnel. In this lesson students, playing the role either of Laura or emergency team members, estimate the landing place, compare predictions and consider whether the two predictions would have been close enough to allow a search and rescue team to be nearby when the plane finally lands. Besides the literary connection with Hatchet, a musical piece entitled "Flying Without Wings" is provided to appeal to learners and broaden the sense of involvement. The musical selection is from a High School Band in Grundy County, Tennessee, composed of students with learning disabilities. The powerpoint video lists places they were invited to perform concerts. The lyrics are poignant for the story being portrayed in this lesson. A soundtrack that can be used without the video is also included as a separate file. (See resources.)
2004	<u>Fantastic Fractional Foods</u>	Grade 6	Using common food illustrations and examples, students will be able to identify and list equivalent fractions, compute the least common multiple and greatest common factor, order, compare, and add two or more fractions with unlike denominators.

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2004	<u>Integers: Quick, Fun and Easy To Learn</u>	Grade 6	Students will identify and understand positive and negative integers. Using this understanding, the students will use the number line, study guides, worksheets, manipulatives and computer technology to perform addition and subtraction of integers. This will give the students the knowledge to extend the whole number system in both directions as well as magnitude.
2004	<u>Introducing Integers and Their Operations</u>	Grades 6-8	This unit includes lessons that will introduce students to what integers are, how they are used in real life, and then give them strategies and rules for adding, subtracting, multiplying and dividing integers.
2004	<u>Investigating Integers, an Introduction</u>	Grades 6-8	This lesson will prepare students to work with integers by comparing and computing with them. They will recall the concept of additive inverse as well as apply commutative and associative properties to evaluate expressions using integers. Students will use horizontal number lines and/or thermometers to examine the movement between positive and negative numbers to understand changes in temperature, altitude, sea level, bank accounts, stock markets, yardage in football plays and other real life situations.
2004	<u>Let's Get Graphing!</u>	Grades 6-7	This unit reviews reading and analyzing of various types of graphs, then continues with activities aimed at practicing application of appropriate scale and plotting points on the coordinate plane.
2004	<u>Understanding Fractions</u>	Grade 6	Students will learn to identify equivalent fractions, write fractions in lowest terms, reduce improper fractions, and convert between improper fractions and mixed numbers.
2003	<u>Decoding Word Problems</u>	Grades 6-8	Students will learn to translate the language of word problems into mathematical expressions they can solve. Students practice translating words into mathematical operations by creating a "code book." Students will learn to identify equivalent fractions, write fractions in lowest terms, reduce improper fractions, and convert between improper fractions and mixed numbers. This book will help students categorize words and phrases under the categories of: Addition, Subtraction, Multiplication and Division, Equality and Other. Students will practice using three important problem-solving strategies to solve the questions. The three strategies are simplifying, drawing a picture and working backwards.

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2003	<u>How Many Jelly Beans Fit Inside?</u>	Grades 7-9	Students will discover that, even with the same perimeter, a rectangle, a square, a circle, and a triangle will have different areas. They will discover the attributes of a shape that maximizes or minimizes the area. The student will find the area of rectangles, graph data, find the area of a circle, and use the Pythagorean Theorem to find the area of a triangle.
2003	<u>Whose Data Is It Anyway?</u>	Grades 6-7	The students will have the opportunity to organize, interpret, and display data using a frequency table to create a circle graph. Students will recognize and determine the mean, median, mode, and range for sets of data. Finally, the students will construct a circle graph using the TI-73 calculator.
2002	<u>Banking</u>	Grade 6	Banking is an integral extension of the 6th Grade unit on decimals. Students will be able to use their knowledge of writing decimals, adding and subtracting decimals by having their own bank accounts for the school year. Students will also learn to record all their deposits, withdrawals, interest, and balances.
2002	<u>Prime Time Secrets</u>	Grades 6-7	In this unit, students will discover the meaning of factor, prime number, composite number, and prime factorization using the areas of rectangles that represent whole numbers. Students will learn these concepts by looking for patterns and making simple conjectures. The unit includes the Fundamental Theorem of Arithmetic using factor trees. Students use the Sieve of Eratosthenes to find the first 25 primes, and they explore the concept of Mersenne numbers. A simple crypto-system using prime factors is introduced to the students as a real world application of prime numbers.
2001	<u>The 3M Olympics (Mean, Median, Mode)</u>	Grades 6-7	These activities will give the student a better understanding of measuring length using metric units and calculating measures of central tendency. The student will also understand why different measures of central tendency are favored over others in analyzing data. Graphing skills will also be emphasized.
1995	<u>Divine Ratios: A Study of the Fibonacci Sequence and Golden Ratio</u>	Grades 6-8	This activity introduces the Fibonacci Sequence and relates the ratio of nth term to the previous term to a linear equation. They will compare the ratio of the length to the width in the selected rectangles to the ratios of n to n+1 (excluding the first three terms) found in the Fibonacci Sequence. Students then will correlate the ratio of the length of their upper body to the length of their lower body and the Golden Ratio.

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1995	<u>A Twist on Goldbach's Conjecture</u>	Grades 6-8	Together, the class will explore Goldbach's Conjecture. With guidance, each student will formulate a variation of Goldbach's Conjecture. Individually, each student will collect data related to this conjecture and write a conclusion discussing any patterns and observations.